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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,474	08/28/2001	Kevin Zhang	NFCS-01-027	8102

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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 04/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,474

Applicant(s)

ZHANG ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-16 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-16 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: Brian Healy

DETAILED ACTION

Response to Amendment

1. This action is responsive to Amendment A filed 12/31/02. Claims 1, 2, 6, 9, 12 and 14-16 are now amended. Claims 7 and 17 are now canceled and new claims 18-23 are now added. Claims 1-6, 8-16 and 18-23 are now pending in the application.
2. Based on the applicant's amendment, the objection to the abstract is now withdrawn and the rejection of claim 9 under 35 U.S.C. 112, second paragraph, is also withdrawn.

Response to Arguments

3. Applicant's arguments, with respect to the rejection(s) of claim(s) 1-6 and 8-16 have been fully considered and are persuasive. Therefore, the rejections have been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of new art that has been found.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 6, 9-11, 14-16, 18, 19, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,470,120 to Green et al.

Referring to claim 6, Li et al. discloses all the limitations of the claimed invention. Green discloses an apparatus for aligning optical fibers with optical elements, including a module (202) having a center of rotation; an optical element (102) having a center of rotation and being affixed to the module such that the center of rotation of the optical element is offset from the center of rotation of the module; and a mechanism for directing light, the mechanism including an optical fiber (100) having a wedge formed in a transmitting end (500), where the redirecting mechanism directs light to a location on the optical element. See the figures of the reference.

Referring to claim 9, Green et al. discloses all the limitations of the claimed invention. Green et al. discloses that the location on the optical element (102) is not the center of rotation of the optical element. See the Figures of the reference.

Referring to claim 10, Green et al. discloses that the optical element (102) is aligned with respect to the incident light in order to achieve a desired output from the optical element.

Referring to claim 11, Green et al. discloses that the redirecting mechanism (100) directs light along a path that is substantially parallel to and offset from an axis normal to the center of rotation of the module (202). See Fig. 7.

Referring to claim 14, Green et al. discloses all the limitations of the claimed method. Green et al. discloses a method for aligning optical elements, including:

providing a module (202) having a center of rotation and an optical element, that may be a filter; affixing the optical element to the module such that the center of the optical element is offset from the center of rotation of the module; applying incident light to the optical element, the incident light traveling along a path offset from the center of rotation; and rotating the module about the center of rotation until the desired alignment of the optical element is achieved. It is clear from the teachings of Green et al. that the method could be used to align optical filters. It is also that the optical element or filter would have a plurality of different responses. The optical element or filter would have a certain response when properly aligned and different responses when in varying degrees of improper alignment.

Referring to claim 15, Green et al. discloses all the limitations of the claimed invention. Green et al. discloses that the sleeves are rotated until the desired response is achieved.

Referring to claim 16, Green et al. discloses all the limitations of the claimed invention. Green et al. discloses an apparatus for aligning an optical element, including: module (202) means for rotating about a center of rotation; optical means including a filter, supported by the module means, for responding to an incident light and producing a plurality of responses, the optical means having a predetermined response at a position offset from the center of rotation; means for applying incident light to the optical means, the incident light traveling along a path offset from the center of rotation; and means for rotating the module about the center of rotation until a desired alignment is achieved. It is clear that the optical element or filter would have a certain response

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when properly aligned and different responses when in varying degrees of improper alignment.

Referring to claim 18, Green et al. discloses all the limitations of the claimed invention. Green et al. discloses a device for aligning optical components, including an optical element (120) with an offset lens (102), where the response to a light beam upon a improperly aligned location is low intensity; and a rotator (122) for rotating the optical element (120) to position the incident light bean at a second location, where the lens (102) is properly aligned with the incident light, and So that the desired high intensity response is achieved.

Referring to claim 19, Green et al. discloses all the limitations of the claimed invention. Green et al. discloses that the device may be used to align many different optical components including a filter.

Referring to claim 21, Green et al. discloses all the limitations of the claimed method. Green et al. discloses a method for aligning optical components, including applying an incident light beam to a first location on an optical element (120) with an offset lens (102), where the response to a light beam upon a improperly aligned location is low intensity; and positioning the optical element so that the light beam is incident at a second location, where the lens (102) is properly aligned with the incident light, and So that the desired high intensity response is achieved.

Referring to claim 22, Green et al. discloses all the limitations of the claimed invention. Green et al. discloses that the device may be used to align many different optical components including a filter.

6. Claims 12, 13, 20 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. U.S. Patent No. 6,272,264 to Li et al.

Referring to claim 12, Li et al. discloses a method of tuning an optical filter, including providing an optical element, including a filter (110) having a plurality of responses and having a specified response at a predetermined location; and providing incident light to a location on the filter (110) so as to achieve a desired response other than the specified response. See col. 4, line 35 through col. 5, lines 61. Figure 1 clearly shows the filter aligned to achieve a specified response, which is the center wavelength of the filter. Figure 2 shows filter may be repositioned, where the incident light impacts the filter at a slightly off center location and as a different angle, in order to achieve a desired response from the filter.

Referring to claim 13, Li et al. discloses that the incident light is redirected along a path offset from an axis formed by the center of the filter (110). See Fig. 2.

Referring to claim 20, Li et al. discloses all the limitations of the claimed invention. Li et al. discloses a device for tuning an optical element: including a specified response to a light beam incident at a first location; and a rotator (112) for rotating the optical element to position the incident light on the optical element having a response other than the specified response. Li et al. clearly discloses that sometimes the center wavelength of a filter is not the desired response, therefore the filter can be re-positioned in order to achieve the desired response.

Referring to claim 23, Li et al. discloses all the limitations of the claimed method. Li et al. discloses a method for tuning an optical filter: including applying an incident light to a first location on the filter to achieve a specified response; and positioning the optical element so that the light beam is incident at a different location on the filter having a desired response other than the specified response. Li et al. clearly discloses that sometimes the center wavelength of a filter is not the desired response, therefore the filter can be re-positioned in order to achieve the desired response. Figure 1 clearly shows how the filter is aligned to achieve the specified response, which is the center wavelength of the filter. Figure 2 shows the filter can be repositioned, where the incident light impacts the filter at a slightly off center location and as a different angle, in order to achieve a desired response from the filter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,272,264 to Li et al.

Referring to claim 1, Li et al. discloses an apparatus for an optical alignment system, including: an optical element (110) having a specified response at a first location; and a mechanism for redirecting incident light to a second location on the optical element (110) so as to achieve a desired response other than the specified response. Li et al. clearly discloses a filter (110) that includes a mechanism (112) for tuning the filter, where the filter is rotated about an axis. It is clear that this rotation would change the location where the light strikes the filter. Li et al. does not specifically disclose that the filter is a thin-film filter. However, it is known within the art that thin-film filters are efficient filters for the purpose of allowing selected wavelengths to pass while reflecting other wavelengths. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a thin-film filter as the filter within the device taught by Li et al, since thin-film filters are known to be an efficient means for allowing only selected wavelengths to pass.

Li et al. discloses in Figure 1 that the filter may be aligned to achieve the specified response, which is the center wavelength of the filter. Figure 2 shows that the

filter has been repositioned, where the incident light impacts the filter at a slightly off center location and at a different angle, in order to achieve a desired response from the filter.

Referring to claim 2, Li et al. discloses that due to manufacturing difficulties, the center wavelength of the filter may not be the desired response, so the filter may have to be adjusted to achieve the desired response.

Referring to claim 3, Li et al. discloses that the pigtail optical fiber (102), that includes a wedge shaped transmitting end. See the Figures.

Referring to claim 4, Li et al. does not specifically disclose that the wedge shaped end of the optical fiber (102) has an angle between approximately 8 and 12 degrees. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to angle the end of the optical fiber approximately 8 to 12 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Referring to claim 5, Li et al. discloses that the incident light is redirected along a path offset from an axis formed by the center of the filter (110). See Fig. 2.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,470,120 to Green et al.

Referring to claim 8, Green et al. does not specifically disclose that the wedge shaped end of the optical fiber (100) has an angle between approximately 8 and 12

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degrees. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to angle the end of the optical fiber approximately 8 to 12 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.


Brian Healy
Primary Examiner

KSW
March 27, 2003